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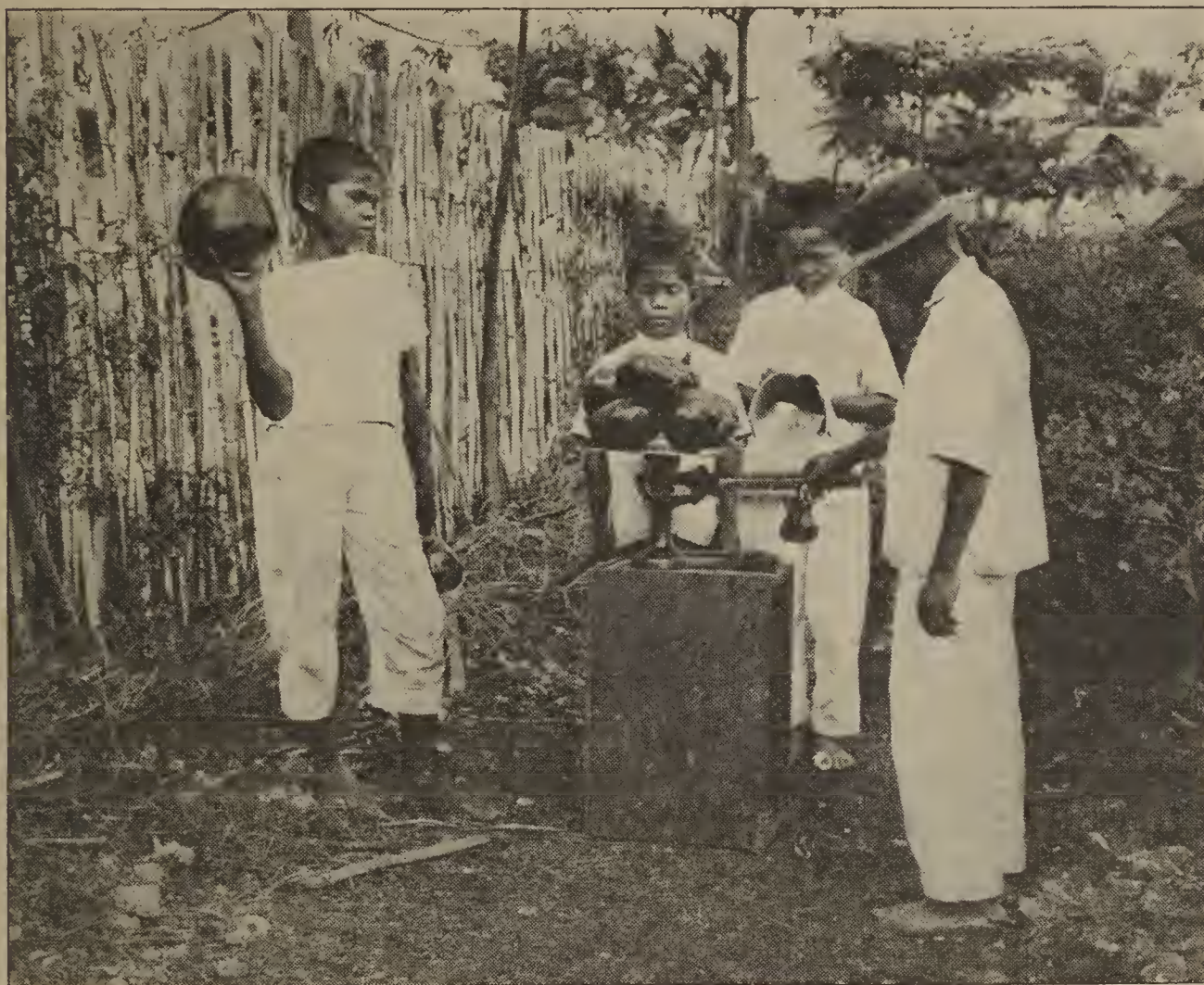
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**EXTENSION CIRCULAR No. 2**

Under the supervision of the STATES RELATIONS SERVICE,  
Office of Experiment Stations, U. S. Department of Agriculture.

**THE HOME GARDEN**

**FOR CLUB MEMBERS.**



Weighing club garden vegetables.

BY

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**G**ROW ENOUGH VEGETABLES for home use  
and make money by selling the surplus.

#### RULES.

Any boy or girl under 19 years of age may become a garden club member by enrolling and agreeing to follow instructions.

Each member must have a garden of at least 500 square feet. Larger gardens may be planted if desired.

Any vegetables that grow in Guam can be planted, but not less than three kinds must be grown.

Each member must keep a record of all work done and the amount of each vegetable grown. The record should be kept on regular record blanks. A story of the season's work should be attached to the record and handed to the club supervisor.

Every club member should make an exhibit of vegetables from his garden at the Guam Industrial Fair and at his district fair and club contests.

# THE HOME GARDEN FOR CLUB MEMBERS.

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## INTRODUCTION.

The purpose of this circular is to set before the Guam boys and girls who are members of the garden club of the extension division some facts which will enable them to care for, and reap a profit from, their home gardens. Any boy or girl who is under 19 years of age may become a member of this club by enrolling and agreeing to follow instructions given by his or her supervisor, or by the superintendent of extension of the Guam station.

The following are the rules for club members:

Each member must have a garden measuring at least 500 square feet. A plat of 500 square feet would be 25 feet long and 20 feet wide, or 50 feet long and 10 feet wide. A member is privileged to cultivate a larger plat than 500 square feet if he wishes to do so.

Any vegetable that grows in Guam can be grown in the garden, but not less than three kinds of vegetables must be planted. Each member must keep a record of all the work that he does and the number and kind of vegetables that he harvests. This information should be made out on the regular garden club record blank. A story of the season's work should be written and attached to the record and given to the local supervisor. He will send it to the superintendent of extension at the experiment station.

Every club member should exhibit at the annual Guam fair, or at his district fair or club contest, the vegetables that he has grown in his garden.

## IMPORTANCE OF A GARDEN.

Every home should have its garden where fresh vegetables can be grown throughout the year. Vegetables take the place of the

more expensive foodstuffs like meat, rice, and corn, which can not always be afforded by every family. They also make good, nutritious food and supply many needs of the body. Every family should eat more of them. A garden which is large enough to furnish vegetables for the whole family will be a means of lowering living expenses and will enable that family to have more money to spend for the other necessities of life.

### KIND OF SOIL.

Good soil is the first thing needed for a garden. The land should be fairly fertile. A sandy loam is the best kind of soil, and it is most frequently found in the valley of rivers or small streams. It is also found on the low ground at the foot of hills, or in valleys between hills. Sandy soil near the beach is not suitable for gardens. Vegetables will not grow well on the sides of hills or on the high land. Land that is very rocky or that has cascajo near its surface will not grow the good vegetables that deep, well-drained soils produce. A good soil is one that is easily worked and is not too sandy. Soils containing plenty of humus will grow much better vegetables than soils not having much of it. Humus is decayed vegetable matter, such as rotted stalks, vines, weeds, or grass.

### PREPARATION OF THE SOIL.

Plants get some of their food through their roots. In order that they may be enabled to do this the soil must be soft and rather loose. Roots can not grow in hard, packed soil because air can not get into this kind of soil. It is generally necessary, therefore, to prepare the ground for plants. The soil is the home of the roots, and it is also the storehouse for plant food.

The garden should be plowed if possible. When a plow can not be obtained, a spade or fosiño should be used to dig up the ground to a depth of 5 or 6 inches. All clods should be broken. Fine, loose soil grows the best vegetables. The soil should not be worked when it is wet and soggy, or when it is dry enough to form large clods.

During the rainy season all planting should be made on raised beds. Beds that are 6 feet wide are a good size. The dirt should be taken from around these plats and placed on top of the beds. This will make the beds about 6 or 8 inches higher than the ground between them. It will provide a large amount of mellow surface soil for the roots and also keep the water from standing on the ground.

Most plants must have plenty of food. Material that furnishes food for plants when it is mixed with the soil is called a fertilizer. Cattle or carabao manure is a very good fertilizer. Pig, goat, and



chicken manure also furnish much plant food. Wood ashes likewise help to feed the plant. These fertilizers should be well worked into the soil when you are getting it ready for planting. Fertilizers pay well for the time spent in putting them on the ground.

### DRAINAGE.

The garden should be drained during the wet season. Water should not be allowed to stand on the ground because it causes the soil to sour and the plants to die. Ditches should be made so that the water will be carried off. These ditches must be made deep enough and have plenty of slope to enable the water to run off the seed beds. Much of the success of the garden from June until November depends upon good drainage.

### WATER.

In order to grow vegetables must have water. After it dissolves the plant food in the soil, this water is used as food by the plant. During the dry season the garden does not always get enough water to satisfy its needs. It is well, therefore, to have the garden located where there is a water supply. Water can always be had from a well or from a stream. Vegetables should be watered when they are transplanted. During dry weather the garden should be watered every day. The best time to water the garden is after 4 o'clock in the afternoon. At this time of day the sun is not hot and the soil does not dry quickly. Do not forget to use plenty of water during dry times.

### DISTANCE BETWEEN ROWS.

Most vegetables in Guam are cultivated by hand. The rows can be closer where a fosiño is used to make them than where a carabao and cultivator are used for this purpose. The distance between rows depends upon the kind of plants you are growing. The rows of low-growing plants like radishes, carrots, peppers, Bush Lima beans, and the like, should be about 18 inches apart. Those of the tomato, eggplant, and other large, bushy plants should be at least 3 feet apart. Watermelon, cucumbers, and other vine crops should be much farther apart than 3 feet.

The distance and depth for planting or for setting plants will be found under the heading "Planting directions."

### LAY OFF STRAIGHT ROWS.

Straight rows make the garden attractive. Rows that are crooked are hard to cultivate and they do not grow any better vegetables for being crooked. Straight rows are easily made. Stretch a string or

line across the garden, attaching the string to two stakes, one on each side of the garden. Run a hoe or garden cultivator along the line to make the rows, or use a stick if a hoe is not handy. Move the stakes over the required distance for each row. Make the row shallow for small seeds, but make the holes deeper for larger seeds. Holes can be made wherever they are needed for seed that is planted in hills.

### CULTIVATING THE GARDEN.

Cultivation is another name for stirring the soil. It can be done with a plow, a cultivator, a hoe, or a fosiño. Nearly every one knows that the care of the garden is a very important matter. Proper soil preparation and planting come first. Cultivation comes next when large crops are expected.

A small garden may be cultivated with a hoe alone, or with a fosiño. In large gardens a cultivator is the biggest help. In either case, the aim is to keep the garden clean.

Cultivation keeps the ground soft and in good condition. It also kills the weeds. Weeds use the food that belongs to the plants, and they should be killed while they are small. Weeds that are near the plants can be pulled up by hand. A hoe may injure the roots of the plants. See that good cultivation is given your garden and that no weeds are allowed to grow in it.

### SEED.

Good seed is necessary to grow good plants. Such seeds are obtained only from the best plants. They can be obtained from two sources. Fresh seed that comes direct from the United States is good. This seed can usually be obtained from the experiment station. Seed that is saved from selected, healthy plants on the island is also good, and often it is the best to be had. Select this kind of seed from the plants and vegetables that you wish to grow. Save seed from the best plants only. Old seed should not be planted because it seldom grows. Seed should be kept in tight tin boxes, or in bottles. By a "tight" tin box is meant one on which the lid fits securely. Seed that is left exposed to the air will soon lose its power to grow. Be sure that the seed is dry before it is put into containers. A good gardener is always careful about his seed. See that you are a good gardener.

### SEED BOXES.

A shallow box for growing seedlings is called a seed box. Some people call it a flat or germinating box. This is because the boxes are flat and the seed starts life in them. The seeds of most vegetables are planted in the garden where the plants are to grow and



mature. In Guam it has been found that tomatoes, eggplants, peppers, and lettuce do better when started in seed boxes. The young plants are thinned out when they are small and often placed in other boxes or in bamboo pots. When they are 6 inches high they are transplanted into the garden.

Seed boxes can be protected from ants by placing them on a table that has its legs standing in cans of water or oil. Heavy rains and hot sun kill some of the tender plants. Seed boxes can be protected from sun and rain by a covering of coconut leaves. Seed boxes are easily made. Half of a kerosene box, or any small, shallow box will do. Holes or cracks should be made in the bottom of the box for drainage.

#### TRANSPLANTING.

Transplanting means taking the plants from the pots or seed boxes and placing them in the field. Only the strong and healthy plants having a well-developed root system should be transplanted. The soil should be soaked with water before the plants are removed from the seed boxes. The plants should be pulled out gently so that as much soil as possible will be left on the roots. The plants should be set in the field on a rainy or cloudy day. This will keep them from wilting. During the dry season they should be transplanted late in the afternoon. When you are transplanting remember to give the plants plenty of water and provide them with shade.

The plants should be set in the field soil fully as deep as they stood before they were transplanted. The soil should be packed well around the roots. In case any of the plants die, replace them with other plants.

#### FENCES AND WINDBREAKS.

Every garden should be fenced. Animals that are allowed to wander about do great damage to growing crops. The fence should be strong. It should keep out carabao, hogs, and chickens. It will not do this, however, unless it is well made. Time spent in fence building is never wasted. One crop saved will more than pay for the cost of a good fence.

Bamboo, which is easily obtained in Guam, makes a good fence. In fact, a number of the native materials will make strong fences. Camachile makes a good permanent fence because it continues to grow. However, it must be kept trimmed. Neat looking fences make the garden attractive.

Windbreaks shield the plants from injury during heavy winds. Every garden should be protected by them. Pigeon peas make one of the best windbreaks, and at the same time furnish large quantities of food. (Pl. III, fig. 2.) This crop should be planted around the

outside of the garden, or on the side from which the winds blow most frequently. It should be planted in two rows 3 feet apart each way. Other plants will also make excellent windbreaks. Bananas should not be used because they blow down too easily.

#### TIME OF PLANTING.

Most vegetables grow the year round, and they can be planted whenever the soil and weather conditions are favorable. Certain times of the year are much better than others for planting. Most failures occur from June 15 to October 15. The most successful plantings are from November to March. Some plants are exceptions. Cucumbers do better in the rainy season than at any other time of the year. Good drainage during the rainy season and irrigation in dry weather will prolong the successful season of any growing crop. Seed should not be planted when the soil is very wet, because it will rot. When the soil is too dry the seed will not grow. It should be planted in dry weather only when the soil can be watered. The best time to plant is in November and in April. This is after the heavy rains have ceased and before they begin again.

Vegetables are needed daily as food. Planting at different times of the year enables one to have a supply on hand all the time. Plant at regular intervals, according to the time required for the vegetables to grow. Do not be contented with a plentiful supply during the easier gardening season and only a few during the rest of the year.

Some plants fruit in all months. Some grow better during the rainy season, and others do better during the cool season. Cowpeas and some beans do well in the dry season. Learn at what time of the year it is best to plant the different seeds so that you can have fresh vegetables every day. Most of the vegetables can be grown during the dry season provided they are well watered. Plant the greatest number of those vegetables that do well and are liked by the family.

#### LENGTH OF TIME FROM PLANTING TO HARVESTING.

Vegetables should be eaten every day. However, in order that a supply can be had every day it is necessary that you know how long it will take them to grow before they are ready to be harvested, and how long they will produce after the first harvest. The following table shows the average number of days from the time they are planted until they are ready to harvest, number of days between the first and last harvest, and the length of time the plants will occupy the ground.



*Average number of days elapsing from time of planting to time of harvesting.*

Name of plant.	From date of planting to first harvest.	From date of first harvest to last.	Length of time plants occupy land.	Name of plant.	From date of planting to first harvest.	From date of first harvest to last.	Length of time plants occupy land.
	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>		<i>Days.</i>	<i>Days.</i>	<i>Days.</i>
Beans, Kentucky Wonder.....	57	21	78	Muskmelon.....	73	21	94
Beans, Bush Lima.....	80	84	164	Mustard.....	54	18	72
Beans, frijoles.....	55	33	88	Okra.....	68	133	201
Beans, seguidillas.....	174	40	214	Onion (seed).....	112	80	192
Beets.....	50	55	105	Onion, native sets <sup>1</sup> ...	79	85	164
Carrots.....	98	64	162	Peppers.....	76	144	220
Corn.....	120	.....	120	Pumpkins.....	93	55	148
Cowpeas.....	70	40	110	Radish, Cincinnati Market.....	32	30	62
Cucumbers.....	57	32	89	Radish, Chinese.....	40	26	66
Eggplant, New York Improved <sup>1</sup> .....	88	82	170	Squash.....	62	63	125
Eggplant, native <sup>1</sup> .....	59	51	110	Tomatoes <sup>1</sup> .....	82	76	158
Lettuce.....	35	23	58	Turnips.....	62	28	90
				Watermelon.....	109	48	157

<sup>1</sup>From time of transplanting.

### PLANTING DIRECTIONS.

Planting should not be done when the ground is too wet. Seeds of the same kind should be planted at the same depth. Small seed is planted shallow. Large seed is planted deeper than small seed. Do not waste seed. Sow only as thick as is required to have a good stand.

The following directions will aid you to grow in the right way those vegetables that do well in Guam. If you do not understand everything, or if you want to know more about some certain thing, ask the supervisor of your local club or some one connected with the experiment station for the information you wish.

*Beans, Kentucky Wonder.*<sup>1</sup>—Plant 1 to 1½ inches deep, dropping the seed 4 to 6 inches apart in the rows. Provide supports for the vine to climb onto. The green beans are best for eating when the pods break with a snap and do not bend or tear.

*Beans, Bush Lima.*—Plant seed from 1 to 1½ inches deep and 4 inches apart in the row. Pick for eating just before the pods are ripe and while the beans are plump and still tender.

*Beans, frijoles.*—Follow the directions given for planting the Kentucky Wonder bean.

*Beets.*—Sow the seed shallow, that is, less than 1 inch, and fairly thick. When the plants are 2 inches high, thin them out so that they will be from 4 to 6 inches apart. The tender tops can be used for greens. The root is the part of the older plant that is eaten.

*Cabbage.*—This vegetable has not been grown with much success in Guam. Plant in seed boxes and transplant on rainy or cloudy

<sup>1</sup> If you want to grow very many beans you should join the bean club. Ask your teacher about it.



days after the plant is 4 inches high. Plants should be from  $1\frac{1}{2}$  to 2 feet apart.

*Calabaza*.—Plant where the vine can grow on fences. A few hills will supply the family.

*Carrot*.—Sow seeds  $\frac{1}{2}$  inch deep and fairly thick. Thin plants to 2 or 3 inches apart in the row. The roots should be harvested before they become woody. (Pl. I, fig. 1.)

*Cassava*.—Plant cuttings that are 6 or 8 inches long and that are taken from the stems of old plants. Place 4 feet apart each way.

*Condor*.—Cultivate same as squash is cultivated.

*Corn*.<sup>2</sup>—Plant 4 or 5 kernels in hills that are from 3 to  $3\frac{1}{2}$  feet apart each way. Thin to 3 stalks in a hill.

*Cowpea*.—Plant 3 or 4 seeds in hills that are 2 feet apart. When the plants are 6 inches high, thin them to 2 plants in a hill. The vines produce more pods when they are given support. Use the same as Kentucky Wonder beans.

*Cucumbers*.—This vegetable grows well especially during the wet season. (Pl. I, fig. 2.) It should not be planted closer than 3 feet each way; plantings that are made farther apart are still better. To obtain the best results, dig holes where each hill is to be; place a small shovelful of manure in the holes and mound the soil over the manure. Plant 5 or 6 seeds an inch deep in a hill and thin to 3 plants after they are well started.

*Eggplant*.—Plant seed in seed boxes, or in bamboo pots. Set the plants from seed boxes 3 feet apart. (Pl. II, fig. 1.)

*Lettuce*.—When sowed direct in the garden, plant  $\frac{1}{2}$  inch deep and thin the plants to 6 inches apart. Since ants are very fond of this seed it is usually better to plant it in seed boxes and transplant later, setting the plants from 12 to 18 inches apart. (Pl. II, fig. 2.)

*Muskmelon or cantaloup*.—Follow the directions which are given for planting cucumbers. Muskmelons do better before and after the rainy season than any other time.

*Mustard*.—Plant  $\frac{1}{2}$  inch deep, fairly thick, and thin the plants to 6 inches apart.

*Okra*.—Plant 3 or 4 seeds in hills that are 3 feet apart each way, or in rows, leaving a plant every 18 inches. The pods should be picked when they are young and tender. If the pods are allowed to ripen the plants stop producing.

*Onion, seed*.—The seed are very slow to sprout and do not always grow. Plant 1 inch deep and thin the plants to 3 inches apart. (Pl. III, fig. 1.)

*Onion, sets (shallot)*.—Cut tops off 2 inches above bulbs, and divide the bulbs. Plant 8 to 10 inches apart.

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<sup>2</sup> If you wish to grow much corn you should join the corn club. Your teacher will tell you about it.

PLATE I.



FIG. 1.—Carrots.

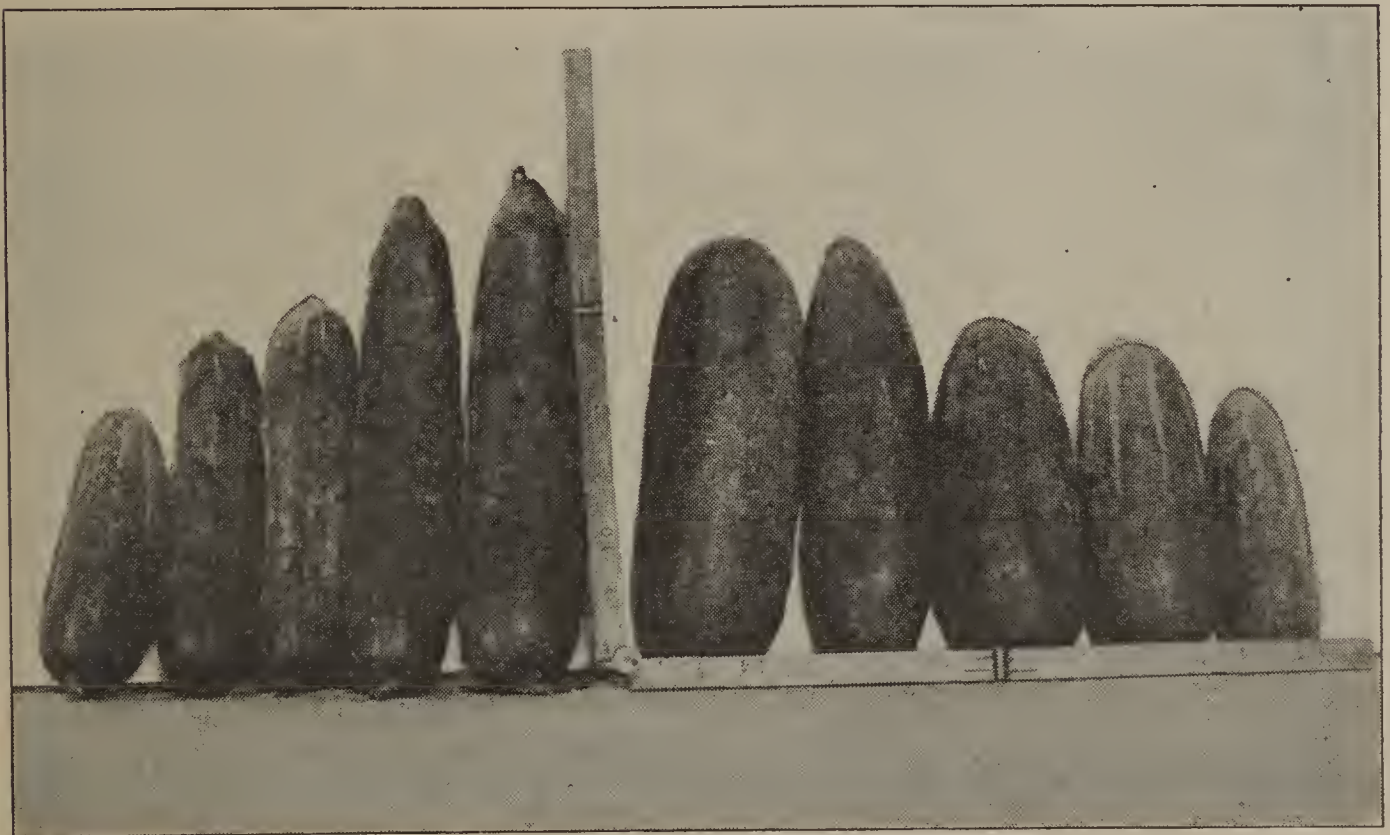


FIG. 2.—Cucumbers.



PLATE II.



FIG. 1.—Eggplant.



FIG. 2.—Lettuce.



PLATE III.



FIG. 1.—Onions.



FIG. 2.—Pigeon peas.





FIG. 1.—Radishes growing.



FIG. 2.—Chinese radishes.



*Parsley*.—Plant about 1 inch deep. Thin the plants if they are too close. Used for seasoning and garnishes.

*Pea, garden*.—Plant so as to mature in March. (See planting table.) Plant seeds 2 inches apart in rows that are 2 inches deep. Pick and shell the pods while they are green.

*Pea, pigeon*.—Plant 3 or 4 seeds in hills that are 3 or 4 feet apart each way. (Pl. III, fig. 2). Makes good windbreak around the garden. Pick seeds when they are green. They can also be used when dried.

*Pepino*.—Plant same as cucumber.

*Peppers, sweet*.—Plant in seed boxes. Transplant when 6 inches high and set the plants 18 inches apart. Shade the plants with coconut leaves during the dry season. The best varieties are Bell, Bull Nose, Chinese Giant, Golden Dawn, and Sweet Pimento.

*Peppers, hot*.—Plant same as sweet peppers. Native varieties should be planted 3 feet apart. Cayenne and Small Chili are good varieties of the imported seed.

*Pumpkins*.—Plant in hills similar to those made for cucumbers, but 6 to 8 feet apart.

*Radish*.—Plant seed 1 inch deep so that the plants will be 2 inches apart. Harvest 20 to 30 days after planting. (Pl. IV, fig. 1.) The Chinese variety grows larger, may be left in the ground longer than other varieties, and still be good to eat. (Pl. IV, fig. 2.)

*Squash (summer bush)*.—Plant 5 or 6 seeds 2 inches deep in hills that are 3 or 4 feet apart. Thin the plants to 2 or 3 per hill.

*Squash (vine type)*.—Plant same as bush variety, but in hills that are 6 or more feet apart.

*Sweet potato*.—Plant cuttings on well-drained land or on ridges. Plantings should be 10 inches apart in rows that are 3 or 4 feet wide.

*Swiss chard (acetgas)*.—Transplant from seed boxes, or plant 4 or 5 seeds in hills that are 10 or 12 inches apart. Thin to a single plant in a place.

*Tomato*.—Sow thinly in seed boxes. Transplant when they are 6 inches high. A short, stocky plant having plenty of good roots is the best plant for transplanting. Tomatoes do their best when planted from November to June. Set plants 3 feet apart and provide bamboo frames or stakes to support them. Get seed of the improved varieties from the experiment station.

*Turnip*.—Plant same as radish.

*Watermelon*.—These should be planted on well-drained ground of a sandy nature. Plant 5 or 6 seeds 1 or 2 inches deep in hills that are 6 feet apart. Manure placed in the hills and covered with soil makes an ideal planting place. Thin the plants to 2 vines to a hill.



